



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,986	07/27/2005	Richard Gilbert	310134.402USPC	5209
500 7590 09/11/2007 SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVE SUITE 5400 SEATTLE, WA 98104			EXAMINER NUR, ABDULLAHI	
			ART UNIT 2877	PAPER NUMBER
			MAIL DATE 09/11/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/520,986

Applicant(s)

GILBERT ET AL.

Examiner

Abdullahi Nur

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 34-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/25/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreimer et al. (US 2001/0053521 A1) [Kreimer] in view of Kreimer et al. (US 2003/0073139 A1) [hereinafter Kreimer02].

As to claim 34, 46, 52, 64 and 65 Kreimer teaches a system for detecting the presence of a molecule in an analyte comprising: an analyte carrier having a conducting surface for receipt of an analyte in an analysis region of the surface (paragraph 0155); a first laser radiation source arranged to provide radiation directed, in use, to the analysis region to cause Raman scattering (paragraph 0213, lines 1-15); a first sensor arranged to detect radiation from the first laser radiation source that has been scattered from the

analysis region by Raman scattering to detect the presence of the molecule (paragraph 0087, lines 1-2).

Kreimer does not teach a second laser radiation source arranged to provide radiation, in use, to the conducting surface at an angle to the conducting surface such that a field is generated in the analysis region; wherein the first and second laser radiation sources and the conducting surface and wavelength of the second radiation source are arranged such that the field generated by the second laser source matches a band gap of the Raman scattering and thereby causes an enhanced Raman scattering effect of radiation of the first laser source. Kreimer02 teaches a system for measuring analytes by Raman scattering and Surface Plasmon Resonance that can use two independent light sources to independently perform SERS and SPR measurements (paragraph 0012, lines 1-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made use two light source to perform SERS and SPR on the same analyte in order to provide SPR assisted Raman scattering to further enhance the Raman signal emanating from the analyte.

As to claim 35, Kreimer in view of Kreimer02, teaches all as applied to claim 34, and in addition Kreimer teaches conducting surface comprising a colloidal metal film (paragraph 0112, lines 1-3).

As to claim 36, Kreimer in view of Kreimer02, teaches all as applied to claim 34, and in addition Kreimer teaches metal film comprising aluminum, copper, silver or gold (paragraph 0114, lines 1-3).

As to claims 37 and 55, Kreimer in view of Kreimer02, teaches all as applied to claim 34-36 and 52, and in addition Kreimer's layer can have thickness in the said range.

As to claims 38 and 39, Kreimer in view of Kreimer02, teaches all as applied to claim 34-36, and in addition Kreimer teaches a reporter dye having a binding molecule for selectively binding to an analyte molecule to be analyzed (paragraph 01267)

As to claims 43 and 44, Kreimer in view of Kreimer02, teaches all as applied to claim 34-36, and in addition Kreimer teaches microliter of colloidal on substrate (paragraph 01238, lines 1-2).

As to claims 45 and 63, Kreimer in view of Kreimer02, teaches all as applied to claim 34-36 and 52, except for the prism arrangement. Kreimer02 teaches a prism 3008 for use of plasmon resonance.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use prism arrangement for use of Plasmon Resonance in order for a light beam enter the prism, interact with metal layer, and thereby generate surface plasmon resonance in the metal layer.

As to claims 47, and 48, Kreimer in view of Kreimer02, teaches all as applied to claim 34-36 and 46, except for the providing radiation at or near the critical angle to the conducting surface; and conducting surface having surface plasmons of a surface plasmon wavelength, and the second laser radiation source is arranged to provide radiation at substantially the surface plasmon wavelength. Kreimer02 teaches a second

source that can provide radiation at or near the critical angle; and conducting surface having surface plasmons of a surface plasmon wavelength (Fig.3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use second laser source providing radiation at or near the critical angle, provide conducting surface having plasmon wavelength in order to provide a light beam enter the prism, interact with metal layer, and thereby generate surface plasmon resonance in the metal layer.

As to claims 49, 50 and 51, Kreimer in view of Kreimer02, teaches all as applied to claim 47, and in addition Kreimer teaches sensor arranged to detected radiation from the first laser light source refracted from the surface; single sensor arranged to detect a change in intensity of the refracted radiation to detect the presence of the molecule (paragraph 0087, lines 1-2).

As to claim 53, Kreimer in view of Kreimer02, teaches all as applied to claim 52, and in addition Kreimer teaches conducting surface comprises a colloidal metal film (paragraph 0112, lines 1-3).

As to claim 54, Kreimer in view of Kreimer02, teaches all as applied to claim 53, and in addition Kreimer teaches teaches metal film comprising aluminium, copper, silver or gold (paragraph 0114, lines 1-3).

As to claims 56 and 57, Kreimer in view of Kreimer02, teaches all as applied to claim 52, and in addition Kreimer teaches a reporter dye having a binding molecule for selectively binding to an analyte molecule to be analyzed (paragraph 01267).

As to claim 61 and 62, Kreimer in view of Kreimer02, teaches all as applied to claim 52, and in addition Kreimer teaches microliter of colloidal on substrate (paragraph 01238, lines 1-2).

Claims 40, 41, 58, 59 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kreimer in view of Chan et al.(US 2003/0231304 A1) [hereinafter Chan].

As to claims 40, 41, 42, 58, 59 and 60, Kreimer in view of Kreimer02, teaches all as applied to claims 34-36 and 52, except for the microfluidic chip with multiple channels. Chan teaches various fluid filled compartments, such as microfluidic channels (paragraph 0046, lines 1-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate microfluid chip as taught by Chan into Kreimer's invention in order to integrate sample treatment, preparation, and detection in one chip.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdullahi Nur whose telephone number is (571) 270-1298. The examiner can normally be reached on Monday - Friday, 8 a.m. to 5p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2877

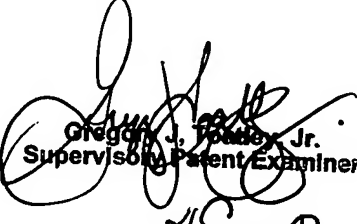
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abdullahi Nur

AN

Patent Examiner

AU 2877


Gregory J. Pinsky Jr.
Supervisory Patent Examiner
4 SEP 07